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Notice of Allowability	Application No.	Applicant(s)	
	09/780,358	KIM, GANG-HO	
	Examiner	Art Unit	
	Dac V. Ha	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--
 All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 07/01/04.
2. ☒ The allowed claim(s) is/are 1-6, 8-9, renumbered as 1-8, respectively.
3. ☒ The drawings filed on 12 February 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>08/26/04</u> . 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____. |
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EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. James Eller (Reg. No. 39,538) on August 26th, 2004.

The application has been amended as follows:

Claim 1:

Line 17, "data" has been changed to --the data--

Claim 2:

Line 5, "the real data" has been changed to --the inputted real data--

Claim 3:

Line 3, "the real mode" has been changed to --a real mode--

Line 4, "the complex mode" has been changed to --a complex mode--

Claim 4:

Line 3, "the real filter output value" has been changed to --the real filter output values--

Lines 5-6, "real filter output value" has been changed to --the real filter output values--

Claim 5:

Line 4, "a channel select circuit" has been changed to --the channel select circuit--

Line 4, "the inputted real data" has been changed to --inputted real data--

Line 5, "the real/complex mode" has been changed to --a real/complex mode--

Line 7, "imaginary error" has been changed to --complex real error--

Claim 6:

Line 4, "a second" has been changed to --second--

Claim 8:

Line 2, "equalizer" has been changed to --equalizing method--

Line 9, "the final data" has been changed to --a final data--

Line 10, "subtracting the value" has been changed to --subtracting a value--

Line 14, "filter output data" has been changed to --filter output--

Claim 9:

Line 2, "equalizer" has been changed to --equalizing method--

Lines 4-5, "subtracting the value" has been changed to --subtracting a value--

Line 5, "imaginary" has been changed to --the complex imaginary--

Line 6, "the value" has been changed to --a value--

Line 7, "imaginary" has been changed to --the complex imaginary--

Line 10, "real error" has been changed to --the complex real error--

Line 12, "the imaginary error" has been changed to --the complex imaginary error--

2. The following is an examiner's statement of reasons for allowance:

The the present invention provides a real/complex dual combination channel equalizer and equalizing method which is capable of minimizing complexity of a receiver by owning construction resources of a real channel equalizer and a complex channel equalizer jointly to the maximum while maintaining performance of the real and complex channel equalizer. General construction and operation of a real and complex channel equalizer is not new in the art, however, prior art of record, taking individually or collectively, fails to fairly teach the real/complex dual combination channel equalizer and equalizing method, as claimed, including the following features:

"a channel select unit for outputting selectively real data and imaginary data transmitted from a transmission terminal; a coefficient operation unit for outputting real filter output values and an imaginary filter output value by multiplying each real or imaginary data outputted from the channel select unit to a tap coefficient;"

"a real slicer unit for generating real decision data and a real error by data outputted from the subtracter;

a complex real slicer unit for generating complex real decision data and a complex real error by the data outputted from the subtracter;

a real decision orientation filter unit for generating a successor interference signal by being inputted data and error outputted from the real slicer unit and complex real slicer unit; and

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complex imaginary slicer unit for generating complex imaginary decision data and an imaginary error according to a signal outputted from the coefficient operation unit" in independent claim 1 (claims 2-6 depend therefrom);

and the following features:

"inputting real data and imaginary data to a channel select unit;

outputting data selected by the channel select unit";

"selecting and outputting imaginary filter output among the outputted data;

outputting a final data of the real filter by finding a value by subtracting a value outputted from a real decision orientation filter unit from the outputted data;

outputting complex real data and error by the outputted data;

outputting complex imaginary decision data and error by the outputted imaginary filter output" in independent claim 8 (claim 9 depends from claim 8).

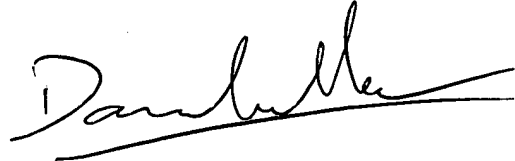
Therefore, claims 1-6, 8-9 are found to be novel and unobvious over prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dac V. Ha whose telephone number is 571-272-3040. The examiner can normally be reached on 5/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Dac V. Ha', with a horizontal line drawn underneath it.

Dac V. Ha
Examiner
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